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### 31. ON THE MODE OF PREYING OF A GIANT WATER BUG (*BELOSTOMA INDICUM* LE PELETIER & SERVILLE, 1775) ON A FROG (*RANA TIGERINA* DAUDIN, 1903)

The giant water bug's (Insecta: Hemiptera: Belostomatidae) habit of feeding on other fresh water fauna is well known. It is a menace to fishery owing to its predacious habit. Dimmock (1886) found some species of giant water bug that were destroying the young fishes in the state fish hatcheries of Massachusetts. No information, however, is available in the literature as to the exact mode by which it kills its large vertebrate preys like frogs, toads, salamanders and so on. Green (1901), who studied the biology of these bugs in aquaria, mentioned that large insects and other organisms falling on water constitute the main food of these bugs; and that, they also feed on frogs when they are able to catch them. Rankin (1935) used damaged tadpoles and pieces of young frogs to feed the nymphs of *Lethocerus americanus* in the culture he made for studying the life history of the species. It is, therefore, worthwhile to record here an observation on the exact mode of preying by one of such giant water bugs, namely *Belostoma indicum* on a frog, *Rana tigerina* in its natural habitat.

On August 23, 1972, I observed, while on a faunistic survey, near Kushnapur village (c. 4 km N.E. of Ghatgaon), Keonjhar district, Orissa, a tug-of-war between a nymph of *B. indicum* and a subadult *R. tigerina* in a temporary water pool, located in a paddy field. The bug had mounted on to the back of the frog and had tightly grabbed its gular region by the fore pair of legs, which are short and raptorial.

The frog often moved deep into water but immediately came up to the surface being unable to get rid of its predator. Such movements of the frog continued for 3-4 minutes. The bug, however, struck firmly to the back of the frog and tightened its grip further and further. Ultimately, the frog did not show any sign of movement and floated on the surface of the water while the bug still clung to its back. With the help of a water net both were brought ashore and even during this process the bug did not leave its prey. It was then forcibly removed from the frog, which had by then succumbed. The frog was examined thoroughly and no mark of injury in the form of puncture or otherwise was detected on its body. Even after rigorous squeezing no trace of blood could be detected on any region of body. In all probability the frog was strangled to death by the tight grip of the fore legs of the bug around its gular region.

Distant (1906) mentioned: "Its proboscis is capable of producing a very painful puncture", of which he himself had the experience from the South African giant water bug, *B. niloticum*. On the contrary, *B. indicum* (at least at its nymphal stage) appears not to rely on its proboscis for killing its prey and instead uses its fore pair of raptorial legs for strangling its large vertebrate prey to death.

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### 32. DEATH OF CERTAIN INSECTS ON SHRUB *BIDENS PILOSA*

From a survey of literature it appears that not much information is available on insect ecology and associated plants. Recent studies on various groups of life forms including birds (Weed dispersal etc.—Bombay Natural History Society's Seminar on Economic Ornithology) have thrown light on various related factors deserving attention.